Are large scale (Brigade Combat Team or Regimental level and above) United States Army airborne operations effective in the context of 21st century warfare?

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FM 90-26, Airborne Operations, states, "The strategic mobility of airborne forces permits rapid employment to meet contingencies across the operational continuum anywhere in the world." Arguably, the strategic mobility of the United States Army airborne forces has influenced conflicts from Panama, Grenada, to, most recently, Afghanistan and Iraq during Operations Enduring Freedom and Iraqi Freedom. In 2002, the United States Army developed a major transformational effort named the Modular Force Initiative. This initiative involves the total redesign of the operational Army into a larger, more powerful, more flexible and more rapidly deployable force while moving the Army from a division-centric structure to one built around a brigade combat team (BCT). Key concepts involved in the modular force initiative involve a total redesign of the operational Army. The modular force initiative seeks to optimize the BCT design so that the unit can operate throughout the depth of the battlefield. The challenge to airborne forces is to continue to maintain operational significance in the context of 21st century warfare.

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FM 90-26, Airborne Operations, states, "The strategic mobility of airborne forces permits rapid employment to meet contingencies across the operational continuum anywhere in the world." Arguably, the strategic mobility of the United States Army airborne forces has influenced conflicts from Panama, Grenada, to, most recently, Afghanistan and Iraq during Operations Enduring Freedom and Iraqi Freedom. In 2002, the United States Army developed a major transformational effort named the Modular Force Initiative. This initiative involves the total redesign of the operational Army into a larger, more powerful, more flexible and more rapidly deployable force while moving the Army from a division-centric structure to one built around a brigade combat team (BCT). Key concepts involved in the modular force initiative involve a total redesign of the operational Army. The modular force initiative seeks to optimize the BCT design so that the unit can operate throughout the depth of the battlefield. The challenge to airborne forces is to continue to maintain operational significance in this environment. Initial research leads me to believe that there is merit in studying the effectiveness of large scale airborne forces in 21st century warfare. Historical case studies of large scale airborne operations could provide the foundation and the principles for which these operations were conducted.

Large scale airborne operations trace their origin back to the Second World War. Various armies, including the Russians, Americans, and the Germans experimented with the use of airborne forces as a means of vertical envelopment of an enemy in the years leading up to the Second World War. The Germans put these experiments to use on the world stage in the invasion of the small island of Crete. Even though the German forces succeeded in capturing the island, the German forces suffered exceptionally high casualties at the rate of 39% paratroopers wounded or killed in action. Hitler swore to never use airborne forces again based on these high losses but the Allies were convinced otherwise. The "lightening–like victory" that airborne forces achieved was highly regarded by Allied command and they were convinced that this untapped capability needed further examination. The Allies rapidly employed and continued to expand throughout the remainder of the war. By the end of Word War II, the five newly created airborne divisions, 82nd, 101st, 11th, 13th, and the 17th Airborne Divisions, completed large scale airborne operations in both the Pacific and European Theaters of Operation. Although division-sized airborne operations were used on a regular basis during the course of World War II, this usage could not be maintained and was more than likely a thing of the past. This does not mean, however, that airborne forces are not required in the future force structure.

The use of large scale airborne operations in the context of 21st century warfare is examined with respect to: strategic mobility, the ability to seize the initiative, and massed effects. Strategic mobility is the capacity to meet crisis timelines necessary to deploy in response to worldwide events. The ability to seize the initiative is defined as a line of effort that involves executing offensive operations at the earliest possible time, forcing the adversary to offensive culmination and setting the conditions for decisive operations. The final criterion, massed effects, examines large scale airborne operations' ability to attack from multiple directions and dimensions throughout the battlespace which results in a coordinated attack to overwhelm the adversary.

Several recommendations, in regards to the use of large scale airborne operations in the context of 21st century warfare and identified shortfalls in airborne organization, are presented in this monograph. Limited mobility, protection, and lethality on the objective are identified shortfalls in the capability of large scale airborne operations. The use of large scale airborne operations for humanitarian missions and providing security to nongovernmental organizations aiding failed nation states are other recommended uses.

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Introduction

In 2002, the United States Army developed a major transformational effort named the Modular Force Initiative. This initiative involves the total redesign of the operational Army into a larger, more powerful, more flexible and more rapidly deployable force while moving the Army from a division-centric structure to one built around a brigade combat team (BCT). The Modular Force Initiative seeks to optimize the BCT design so the unit can operate throughout the depth of the battlefield.[1] The challenge to large scale airborne forces is to continue to maintain operational significance as a division in this new environment. This monograph focuses on the question: Are large scale (Brigade Combat Team or Regimental level and above) United States Army airborne operations effective in the context of 21st century warfare? Initial research lends credibility to the hypothesis that large scale airborne operations are effective and will continue to be in the context of 21st century warfare.

This monograph uses the development and implementation of large scale airborne operations in accordance with current doctrine against adversaries in the past seventy years as a baseline in order to compare and predict how effective large scale airborne operations will be in terms of 21st century warfare and the future joint operational environment. *Joint Publication 1-02, Department of Defense Dictionary of Military and Associated Terms*, defines doctrine as "fundamental principles by which the military forces or elements thereof guide their actions in support of national objectives. It is authoritative but requires judgment in application".[2] The development of doctrine for airborne forces will come from various sources. United States Army field manuals, both past and present, will provide an idea as to the development or, in some cases,

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[1] U.S. Department of the Army. "Modular Forces" U.S. Army Training and Doctrine Command. http://www.tradoc.army.mil /pao/web_specials/leadership_of_futures/modforce.htm (accessed 31 October 2007). The information in the previous four sentences also comes from this source.

[2] U.S. Department of Defense. *Department of Defense Dictionary of Military and Associated Terms: Joint Publication 1-02*. [dated April 2001. AuthPub-JP.]

the stagnation of airborne doctrine. In addition, historical accounts also provide a lens in the use and application of this doctrine. Edward Flanagan Jr.'s *Airborne: A Combat History of American Airborne Forces* provides that lens for this monograph from the birth of airborne forces to their use in the 1991 Gulf War with Iraq. Maurice Tugwell's *Airborne To Battle: A History of Airborne Warfare 1918 – 1971* also provides an additional lens in regards to the use of large scale airborne operations specifically during World War II.

Joint Publication 1-02 defines effectiveness as part of 'measures of effectiveness' as "the attainment of an endstate, achievement of an objective, or the creation of an effect".[3] In order to determine whether or not large scale airborne operations are effective in the context of 21st century warfare, several documents are reviewed. Central to establishing terms of effectiveness, the following joint concept documents provide the structure for analysis: *Joint Operating Concepts: Major Combat Operations* and *Military Support to Stabilization, Security, Transition, and Reconstruction Operations*; *Joint Integrating Concepts: Joint Forcible Entry Operations and Global Strike*; and *Joint Functional Concept: Joint Requirements Oversight Council Approved Force Application Functional Concept*. Because this monograph is focusing on large scale airborne operations, 21st century warfare is defined in the context of the Joint Operation Environment (JOE) and Joint and Army doctrine written to support that environment. *Joint Publication 1-02* defines the operational environment as "a composite of conditions, circumstances, and influences that affect the employment of military forces and bear on the decisions of the unit".[4] It is in the analysis of what the future environment will look like that will give the joint force the tasks and thus the forces needed to execute successful and decisive combat operations in the 21st century.

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[3] U.S. Department of Defense. *Department of Defense Dictionary of Military and Associated Terms: Joint Publication 1-02*. [dated April 2001. AuthPub-JP.]

[4] Ibid.

First, this monograph looks at the historical background and precedence set by large scale airborne operations. As mentioned before, for the purposes of this monograph, a regimental or brigade combat team size or above operation defines a large scale airborne operation. Case studies are presented from the 1940s and 1980s in order to first show how large scale airborne operations were executed successfully and secondly how the forces accomplished missions in accordance with the then current doctrinal principles that no other force within the United States Armed Forces could have accomplished at the time. The first case study involves the implementation of large scale airborne operations during World War II in *Operation Market Garden*. The second case study involves large scale airborne operations in the late 1980s during *Operation Just Cause*. Doctrinal principles used at the onset of large scale airborne operations are also identified. Analysis of the case studies presented concerning the doctrinal principles used at the time by large scale airborne forces is necessary in order to verify that the operations were executed in accordance with then current doctrinal principles. Past doctrinal principles compared to the current Joint and US Army doctrinal principles used today show how those principles have evolved over the past 70 years.

Another component of this argument is to define how the Joint and US Army will potentially employ forces in the context of 21st century warfare. The Joint concepts, namely the Joint Operating Environment, outline potential employment scenarios. In turn, a majority of the Joint concepts and Joint and US Army doctrinal principles, both past and present, are found in primary Joint and US Army publications of past eras to present time. The elements of the current JOE become the criteria to demonstrate the requirement for large scale airborne operations in the context of 21st century warfare.

Secondly, this monograph defines the future adversary of the joint operating environment. *Joint Publication 1-02* defines an adversary as "a party acknowledged as

potentially hostile to a friendly party and against which the use of force may be envisaged".[5] The *2006 Quadrennial Defense Review Report* notes,

> In the 21st century, the adversary not only includes nation state armed forces but also collapsing and failed states, transnational terrorists, and adversaries that use sophisticated asymmetric strategies, tactics, techniques, and tools. These adversaries procure select state-of-the-art capabilities in open markets to create near peer capabilities in select areas to: be masters of their own environments; be patient and willing to endure long campaigns; and be unpredictable.[6]

Lastly, with the Joint, US Army doctrine, and joint operating environment defined, this monograph uses Joint concept papers and upcoming warfare theories from leading defense and policy experts and strategic theorists to evaluate the effectiveness of employment of large scale airborne forces in the 21st century against the adversary defined in the contemporary environment. *Joint Publication 1-02* defines a joint concept as "[a concept that] links strategic guidance to the development and employment of future joint force capabilities and serve as 'engines for transformation' that may ultimately lead to doctrine, organization, training, materiel, leadership and education, personnel and facilities (DOTMLPF) and policy changes".[7] Current *Joint Integrating Concept, Joint Forcible Entry Operations Version 92A3* sees forcible entry operations as,

> . . . forward presence, a mix of basing options, and operational and strategic maneuver in order to gain and maintain access to ensure entry. Joint forcible entry operations employ distributed operations to attack from multiple directions and dimensions throughout the battlespace. The net result will be a coordinated attack to overwhelm the adversary and achieve the desired effects before the adversary has time to react, thus ensuring conditions for follow-on operations or achieving end state for a singular operation.[8]

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[5] U.S. Department of Defense. *Department of Defense Dictionary of Military and Associated Terms: Joint Publication 1-02*. [dated April 2001. AuthPub-JP.]

[6] U.S. Department of Defense. "Quadrennial Defense Review Report". http://www.defenselink.mil/qdr/report/Report20060203.pdf (accessed 9 November 2007).

[7] U.S. Department of Defense. *Department of Defense Dictionary of Military and Associated Terms: Joint Publication 1-02*. [dated April 2001. AuthPub-JP.]

[8] Ibid., 20.

Only the United States Army's airborne forces in coordination with other armed forces' capabilities, namely the United States Air Force, have the capability to conduct decisive, short notice, forced entry large scale operations deep, meaning beyond the traditional littoral areas that a Marine Expeditionary Unit could be deployed with short notice, into an adversary's territory. The current US Army doctrinal advantages for airborne operations are 1) they provide a quick response on short notice; 2) they have the ability to bypass all land or sea obstacles; 3) they obtain surprise; 4) they have the ability to mass rapidly on critical targets.[9] Airborne forces are able to seize and maintain the initiative until follow-on forces are committed to the fight and then move to conduct full spectrum operations within the theater of operations where the adversary is most vulnerable. This ability to rapidly deploy, land, and sustain a large and powerful airborne combat force is vital to US interests and worldwide commitments.

This monograph analyzes the effectiveness of large scale airborne operations in the context of 21st century warfare using the following three measures of effectiveness or criteria: strategic mobility, the ability to seize the initiative, and massed effects. Strategic mobility is the first criterion for evaluation. *Joint Publication 1-02* defines strategic mobility as "the capability to deploy and sustain military forces worldwide in support of national strategy".[10] Strategic mobility allows the United States Armed Forces to be *where* and *when* they are needed. As part of the *Joint Integrating Concept, Joint Forcible Entry Operations Version 92A3*, the United States Army large scale airborne operations can be the link that can be used as "immediately employable forces to conduct operations that neutralize competent anti-access capabilities when and where freedom of movement and maneuver is needed to set conditions for direct delivery,

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[9] U.S. Department of the Army. *Airborne Operations: Field Manual 90-26*. [dated December 1990. AuthPub-FM.]

[10] U.S. Department of Defense. *Department of Defense Dictionary of Military and Associated Terms: Joint Publication 1-02*. [dated April 2001. AuthPub-JP.]

sustainment and support of distributed forcible entry forces."[11] For the purposes of this discussion, this monograph views strategic mobility as the capacity to meet crisis timelines necessary to deploy in response to worldwide events.

A second criterion for evaluation of large scale airborne operations is the ability to seize the initiative. *Joint Operating Concept Major Combat Operations* defines seizing the initiative as,

> a line of effort that involves executing offensive operations at the earliest possible time, forcing the adversary to offensive culmination and setting the conditions for decisive operations. Rapid application of joint combat power may be required to delay, impede, or halt the adversary's initial aggression and to deny the initial objectives. If an adversary has achieved its initial objectives, the early and rapid application of offensive combat power can dislodge adversarial forces from their position, creating conditions for the exploitation, pursuit, and ultimate destruction of both those forces and their will to fight. Operations to gain access to theater infrastructure and to expand friendly freedom of action continue while the joint forces commander seeks to degrade [the] adversary's capabilities with the intent of resolving the crisis at the earliest opportunity.[12]

Not only can large scale airborne operations seize the initiative but also seize and maintain the operational access to an area that joint forces have designated as an entry point to subsequent full spectrum operations. Seizing the initiative also supports the Joint Forcible Entry Operations' principle of overwhelming and overmatching the adversary in order to achieve end state.[13] Seizing the initiative also has historically been one of the bedrock principles of airborne doctrine from its use as a strategic asset.

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[11] U.S. Department of Defense. *Joint Forcible Entry Operations, Joint Integrating Concept, Version .92A3.* [dated September 2004.] 31.

[12] U.S. Department of Defense. *Major Combat Operations, Joint Operating Concept, Version 2.0,* [dated December 2006.]

[13] U.S. Department of Defense. *Joint Forcible Entry Operations, Joint Integrating Concept, Version .92A3.* [dated September 2004.] 30.

The last criterion for the evaluation of large scale airborne operations is massed effects. *Joint Publication 1-02* defines mass as "the concentration of combat power".[14] *Joint Publication 1-02* defines effects as "the result, outcome, or consequence of an action".[15] Massed effects, in terms of large scale airborne operations, as stated in *Joint Integrated Concept, Joint Forcible Entry Operations Version .92A3* refers to the ability to attack from multiple directions and dimensions throughout the battlespace which results in a coordinated attack to overwhelm the adversary. From a joint force perspective, this enables the force "the ability to attack the adversary from multiple directions, using multiple entry points, and multiple dimensions – air, land, sea, space, and cyberspace".[16] The United States Armed Forces' ability to project combat power in large decisive proportions at one or more decisive locations has a devastating effect on the adversary. The application of large scale airborne operations gives the joint force commander the ability to put a large force on the ground in the least amount of time to gain operational access. Airborne doctrine has consistently used the concept of massed effects as a principle from its inception to recent operations. *Operation Just Cause* demonstrated this with simultaneous and consecutive airborne operations onto the Torrijos Tocument airport complex and the Rio Hato airfield. In less than 36 hours of the joint operation, a division-minus sized parachute force was delivered onto their respective drop zones in order to achieve surprise, mass, and objective.[17] *Joint Integrating Concept, Joint Forcible Entry Operations Version 92A3* further envisions large scale operations needed in case a lodgment is not established for follow-on operations. Mass

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[14] U.S. Department of Defense. *Department of Defense Dictionary of Military and Associated Terms: Joint Publication 1-02*. [dated April 2001. AuthPub-JP.]

[15] U.S. Department of Defense. *Department of Defense Dictionary of Military and Associated Terms: Joint Publication 1-02*. [dated April 2001. AuthPub-JP.]

[16] U.S. Department of Defense. *Joint Forcible Entry Operations, Joint Integrating Concept, Version .92A3*. [dated September 2004.] 20.

[17] Edward M.Flanagan Jr. *Airborne: A Combat History of American Airborne Forces*. [NY: Ballantine, 2003. 452 p.] 7.

[massed effects] is essential to directly attack the objective or distributed objectives as a singular mission.[18]

At conclusion, this monograph addresses identified shortfalls in the current large scale airborne doctrine in terms of recommendations or suggestions for further research. Possible recommendations are presented in terms of force structure and mission essential task list re-prioritization. Derived implications may also influence joint force structure due to the overall dependency of large scale airborne operations to strategic and theater airlift. Finally, this monograph is not all encompassing and thus large scale airborne doctrine will continuously need to be revised in order to ensure alignment with joint future concepts of warfare.

Origins of Airborne Operations Doctrine

The United States Armed Forces first received reports from their military attaches that a number of major powers, including France, Italy, Germany, and the Soviet Union, were experimenting with airborne troops in 1938 and 1939. The US attaché in Germany reported that their airborne techniques were well conceived and organized under the leadership of General Kurt Student.[19] Later, in the most celebrated German airborne operation, *Operation Mercury*, German armed forces seized the island of Crete solely by airborne insertion. The surprise that German airborne forces achieved at the time was highly regarded by Allied command.[20] Though the Germans would cease airborne operations by 1942 due to redirection of personnel resources needed on the Russian front, the Allies, from an American standpoint, recognized the prospective

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[18] U.S. Department of Defense. *Joint Forcible Entry Operations, Joint Integrating Concept, Version .92A3*. [dated September 2004.] 25.

[19] Edward M.Flanagan Jr. *Airborne: A Combat History of American Airborne Forces*. [NY: Ballantine, 2003. 452 p.] 17.

[20] Brian L. Davis, *German Parachute Forces 1935-45*. [New York: Arco Publishing Company, 1974] Later discovered British ULTRA intercepts of German invasion plans showed that the New Zealanders were indeed aware of the airborne invasion but regarded the seaborne invasion the main threat and thus were ill-prepared for an airborne invasion. Albert Palazzo. *Battle of Crete.* Australian Army Campaigns Series – 1. [Australia: National Library of Australia, 2007. 178p.] 25.

rapid employment capability and potential of airborne forces throughout the remainder of the war. One senior officer in 1939 did recognize the potential and had the influence and resources to do something about it – General George C. Marshall.

In April 1939, General Marshall enlisted the help of the chief of infantry, Major General George A. Lynch to conduct a study regarding airborne forces. The study was designed "for the purposes of determining the desirability of organizing, training, and conducting tests of a small detachment of air infantry with a view to determine whether or not our Army should contain a unit or units of this nature".[21] Their initial concept would be to land behind enemy lines and conduct tactical operations. Through coordination with the United States Army Air Corps chief General Henry H. "Hap" Arnold, General Lynch tasked a staff officer, Major William C. Lee, with organizing an infantry board to conduct these tests. By 29 August 1940, the Parachute Test Platoon conducted an airfield seizure demonstration with 200 Soldiers for General Marshall and the Secretary of War Henry L. Stimson. With this successful demonstration, General Marshall told the platoon that whole battalions of paratroopers would soon be activated. By mid-September of that same year, the Parachute Test Battalion had split into two units. The first unit moved to Chanute, Illinois in order to conduct training on parachute maintenance and rigging. The other stayed at Fort Benning, Georgia and formed the first Parachute Battalion, the 501st Parachute Infantry Battalion, under the command of Major William "Bud" Miley. The 501st performed two functions – establishment of the first parachute school and the development of the cadre for the first parachute battalion.

In March 1941, the Army activated the Provisional Parachute Group, commanded by newly promoted Lieutenant Colonel Lee, and all senior leadership came from 501st Parachute Infantry Battalion. LTC Lee's new mission for the Provisional Parachute Group became to train

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[21] Edward M.Flanagan Jr. *Airborne: A Combat History of American Airborne Forces.* [NY: Ballantine, 2003. 452 p], The following paragraph summarizes chapters 1 and 2 of Flanagan's book.

and jump each new battalion, develop tables of organization and equipment (TO&Es), and develop doctrine for the use of airborne troops.[22] With the activation of the Provisional Parachute Group, the United States Army issued *Field Manual 100-5: Field Service Regulations Operations* in 1941 introducing the concept of parachute troops but listed as "troops transported by air". The United States Army doctrine initially envisioned the principal tactical unit for parachute troops as the battalion, which consisted of two or more combat companies and other units required by the mission and operation. In addition, *Field Manual (FM) 100-5*, Chapter 13: Troops Transported by Air, outlined the particular missions assigned to troops transported by air. The missions included:

> seizing and holding, or otherwise exploiting, important tactical localities or installations, in conjunction with or pending the arrival of other military or naval forces; executing an envelopment from the air in conjunction with an attack by ground forces; execution of surprise attacks as a diversion or feint in connection with other air landing or ground operations, or to create confusion and disorder among the hostile military and civilian personnel; and execution of an attack against an isolated enemy position, impossible or impracticable of attack by ground forces.[23]

In regards to the conduct of operations, the airborne unit would not regularly conduct missions alone. The airborne unit(s) would be used, in concept, as a “surprise factor in conjunction with air landing or mechanized troops along the axis of the ground main effort”.[24]

The problem at that point was neither equipment nor training but the lack of personnel. The attack on Pearl Harbor in December 1941 fortuitously solved the problem of a lack of personnel for airborne regiments and the United States as a fighting force. Before the activation of divisions, the Army formed the airborne regiment. By March 1942, the United States Army formed three parachute infantry regiments and the Airborne Command commanded by then

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[22] Idem.

[23] US Department of the Army. *Field Service Regulations, Operations: Field Manual 100-5*. [dated 22 May 1941]: 242-243.

[24] Ibid., 241.

Colonel Lee. The number of regiments created the need for divisions and in August 1942, both the 82nd and the 101st became the Army's first airborne divisions with General Matthew B. Ridgway and General William C. Lee as commanders respectively. During World War II, five airborne divisions would be formed, 82nd, 101st, 11th, 13th, and the 17th Airborne Divisions, and would complete large scale and some of the most historically celebrated, airborne operations in both the Pacific and European Theaters of Operation. Throughout World War II, airborne division commanders would continue to shape airborne doctrine based upon their experiences in combat operations. By 1944, the United States Army issued the updated *FM 100-5* that introduced the term "airborne" instead of "troops transported by air". Doctrine also addressed the commitment of airborne units as a division rather than piecemeal the force during combat operations. Airborne units maintained the original set of missions assigned to them in the previous *FM 100-5*. However, the updated *FM 100-5* added new missions – "capture enemy airfields; capture or destroy vital enemy installations thereby disrupting his command, communication, and supply; delay retreating enemy until the main forces can overtake and destroy him; and seize islands or areas not accessible to other ground forces".[25] This updated doctrine also emphasized the basis on which airborne forces, be it in divisions, brigades, or separate parachute and glider units, were to be employed. Airborne units would be theater of operations forces under direct control of the theater commander until landed in the ground combat area. Airborne units still maintained their principles of employment to achieve surprise, delivered in mass, in combined effort with other military or naval forces, and only on missions that ground forces could not perform as economically or expeditiously.[26] Throughout World War II, airborne forces were used in coordination with ground or naval forces and were primarily assigned tactical

[25] US Department of the Army. *Field Service Regulations, Operations: Field Manual 100-5*. [dated 15 June 1944], 292.

[26] Ibid., 291.

missions directly behind enemy lines. The employment of airborne forces to seize strategic objectives remained in the background of airborne doctrine and in only the minds of senior airborne leaders.[27]

Although the Army used division-sized airborne operations on a regular basis during the course of World War II, this usage could not be maintained primarily due to the lack of missions for airborne divisions afterwards and the war's end. As World War II ended, the 13th, 17th, and 101st Airborne Divisions were deactivated and the Soldiers transferred to the 82nd Airborne Division. In November 1948, the 82nd Airborne Division moved to Fort Bragg, N.C. and was designated as a regular infantry division. The 11th Airborne Division, in 1949, after performing occupation duties in Japan, relocated to Fort Campbell. Just a year later, the 11th Airborne Division began preparation for deployment to Korea. The airborne operations differed in Korea from those in Europe during World War II. In Korea, the airborne operations were conducted during the daylight hours and unhampered by any concentrated enemy aircraft and anti-aircraft fire. The airborne operations were conducted more accurately, normally brigade size elements, and the use of the C-119 cargo plane permitted the dropping of heavier equipment.[28] After the Korean War, the 11th Airborne Division deactivated in Germany in 1958 and its troops would be assigned to the reactivated 101st Airborne Division. With only two remaining airborne divisions, the 82nd and 101st Airborne Divisions, airborne doctrine remained virtually unchanged regarding their employment. However, gliders were no longer used to transport airborne forces due to the great disappointment experienced with glider troops in World War II and joint operations came

[27] Ernest F. Fisher. *Evolution of US Airborne Doctrine*. Military Review [May 1966]: 71-77.

[28] Edward M.Flanagan Jr. *Airborne: A Combat History of American Airborne Forces.* [NY: Ballantine, 2003. 452 p] 366-367.

into military vernacular at this time.[29] Also, airborne forces were beginning to be looked at as a strategic asset. Principles outlining their employment continued to be surprise and mass.[30]

After the Korean War and the advent of tactical nuclear weapons, the Army started to rethink operations and organization of airborne divisions. The Army changed the airborne division from three airborne infantry regiments to five airborne battle groups reducing the overall combat strength from approximately 17,000 to 11,500 officers and Soldiers, also known as the pentomic reorganization. This organization was first experimented with the reactivated 101st Airborne Division. The Army additionally tasked airborne forces to be the first on the ground after a nuclear strike by US forces. Also, the air assault – airmobile concept was being developed to supplement rather than replace the airborne division.[31] The 101st Airborne Division became an air cavalry division in the Vietnam War and then in 1968 became the 101st Airborne Division (Air Mobile). After leaving Vietnam, the division came to rest in Fort Campbell and in October 1974 became the 101st Airborne Division (Air Assault).[32]

Airborne doctrine updated *FM 100-5* again in 1968. The addition of strategic operations to doctrine is evident in the first sentence of chapter 7 stating "The United States maintains its Armed Forces in a posture that permits timely response to the demands of the *national strategy* [emphasis added]."[33] This opening sentence set the stage for the addition of strategic operations to airborne doctrine. A new era in airborne doctrine dawned. In addition to the nuclear capability, the Army looked again at reorganization from a limited warfare point of view and the

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[29] Idem.

[30] US Department of the Army. *Field Service Regulations, Operations: Field Manual 100-5*. [dated 27 September 1954], Chapter 11, Section 14.

[31] Ernest F. Fisher. *Evolution of US Airborne Doctrine*. Military Review [May 1966]: 71-77.

[32] Edward M.Flanagan Jr. *Airborne: A Combat History of American Airborne Forces.* [NY: Ballantine, 2003. 452 p], This is a summation and reorganization of airborne forces coming from Chapters 16-26, p 343-347, 370, 372, 377-379.

[33] US Department of the Army. *Field Service Regulations, Operations: Field Manual 100-5*. [dated 6 September 1968], Chapter 7.

airborne division returned to a traditional organization of three airborne brigades.[34] Airborne operational concepts continued to include mass and surprise but also included, as early as 1962, concepts of initiative and shock effect.[35]

Once the airborne doctrine included strategic missions for airborne forces to assault strategic objectives and provide the quick reaction force for world-wide missions, this set a place for airborne forces in Army doctrine that to this day has proven immoveable. In *Field Manual 90-26 Airborne Operations*, dated 1990, airborne missions are divided into strategic, operational, and tactical operations. Strategic operations are those operations in which the targets are politically significant from a strategic context. Airborne forces provide strategic mobility so that areas throughout the world can be struck deep in enemy-held territory with little warning. Operational missions include seizure of objectives within a theater of war, such as airfields, bridges, and other key terrain deep within the enemy rear area. Tactical missions are those missions in which airborne forces assault in the rear or to the flank of the enemy, preferably where few or no fixed defenses exist and where well-organized enemy combat elements are not present.[36] Doctrinal concepts or principals of airborne operations continue to be surprise and mass.

From the origin of large scale airborne operations in the late 1930s to its continued strategic relevance in today's Army of the 21st century, the United States Army created a force with the capability of strategic mobility and global responsiveness that incorporated the necessary firepower, mass, and surprise to achieve initial mission success against adversaries in a worldwide context. In the introduction, this monograph addressed the criteria for measuring

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[34] Ernest F. Fisher. *Evolution of US Airborne Doctrine*. Military Review [May 1966]: 71-77.

[35] US Department of the Army. *Field Service Regulations, Operations: Field Manual 100-5*. [dated 19 February 1962], Chapter 7.

[36] US Department of the Army. *Airborne Operations: Field Manual 90-26*. [dated December 1990].

effectiveness of large scale airborne operations in the context of 21st century warfare. Based on the doctrinal history of airborne operations, the selected criteria strategic mobility, the ability to seize the initiative, and massed effects are important principles in which large scale airborne operations are executed and essential principles in which future joint force forcible entry operations will be conducted. The following case studies will be reviewed in order to establish how the doctrinal elements or principles of airborne operations were used to order the execution of the large scale airborne operations of *Operation Market Garden* in 1944 and *Operation Just Cause* in 1989.

Case Studies of Airborne Operations

Operation Market Garden

During World War II, the Allies used airborne forces for a variety of roles. Prior to the invasion of Normandy, airborne forces were used to deceive German forces that an attack was pending on the Italian peninsula for the invasion of Rome. As the Germans pulled out of Italy, airborne forces were then used ahead of the main armor and mechanized forces to halt the Germans from destroying bridges and road networks that would aid the Allied advance north. The airborne forces were also assigned to provide harassing fire against the Germans as they withdrew. To the German forces, however, Allied airborne forces were looked at as little more than a nuisance and achieved very little in military terms due to the small size of the force, lack of resources, and the nearly impossible missions. Nevertheless, with the need to provide an early entry force prior to the invasion of the beaches of Normandy, the Allies would soon see a role for an even larger airborne force.[37]

With the invasion of Normandy, airborne forces were assigned a more substantial role given the fact that the forces conducting the sea assault would be vulnerable to German attacks

further inland. The plan called for an airborne task force to delay the considerable German reserves held inland and delay their movement towards the coast until a foothold could be achieved. Although the German opposition was slight and provided little return overall, the airborne mission was deemed a success. After the invasion, Supreme Headquarters Allied Forces Europe Commander, General Eisenhower, envisioned a combined British and American headquarters for airborne troops. The officer to command this organization would be Lieutenant General Lewis H. Brereton, who up until that point commanded 9th US Air Force. As designed, this First Allied Airborne Army, in essence, would not direct operations in the field but would only control the airborne divisions committed to any one operation. Soon, this airborne army would be the force that would conduct the largest airborne operation in history, *Operation Market Garden*. Planning for another operation, however, would solidify the command as its first mission – *Operation Comet.*

After Normandy, the Allied effort had begun to out-run its supplies and the German Army began to show signs of defeat. Either force, be it Britain's 21st Army Group or the United States' Third Army, needed to deliver the decisive blow. Yet, a combined effort was out of the question due to the supply situation. The concept for *Operation Comet* called for Field Marshall Sir Bernard Law Montgomery's Second Army to strike north to reach the Zuider Zee and establish a lodgment north of the Rhine River where the force could maneuver straight into the heart of Germany and to victory in 1944. "Lieutenant-General Brian Horrock's XXX Corps with the Guards Armoured Division would strike through Grave, Nijmegen, and Arnhem, flanked in the west by 11st Armoured Division and to the east by an independent brigade group. Airborne assistance would take the form of landings to seize three main bridges on the Guardsmen's route,

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[37] Maurice Tugwell. *Airborne to Battle: A History of Airborne Warfare, 1918-1971*. [London: Kimber, 1971.], 222 - 224.

over the River Maas at Grave, across the Waal at Nijmegen and over the Rhine at Arnhem."[38] Speed was crucial to the operation in preventing the Germans from recovering and reforming a front. Therefore, the 1st Airborne Division plus 1st Polish Brigade and Corps Headquarters would be dropped ahead of the Second Army's ground advance to seize the bridges over the Dutch water obstacles. This would aid in achieving the mission's objectives and maintaining the momentum. Once the advancing armor secured each of the areas and suitable airfield sites selected, engineers would be flown in by glider to construct airfields in order to bring in more forces.

Operation Comet was postponed forty-eight hours due to the passed opportunity for a pursuit type of operation. Plans were being changed to cater for stiffened German resistance. By the early morning hours of 10 September 1944, *Operation Comet* was cancelled. Later that afternoon however, the 1st Airborne Division commander would be summoned to execute a new and greatly enhanced version of the same operation - *Operation Market Garden*.[39]

Operation Market Garden was broken down into two operations. 'Market' was the airborne portion of the operation executed by all available troops and aircraft of the First Allied Airborne Army. 'Garden' was the ground advance executed by the British XXX Corps in the center and XII and VII Corps on the western and eastern flanks, respectively, advancing slowly. Noted before, 'Market' made up all available elements of the First Allied Airborne Army. Lieutenant General Brereton designated the units would be under 1st British Airborne Corps command, under Brigadier General F.A.M. Browning. This airborne army consisted of the British 1st Airborne Division, the 1st Polish Parachute Brigade, the United States 82nd Airborne Division, the 101st Airborne Division, the British 52nd (Lowland) Division, the delivery group, engineers, and an anti-aircraft unit. The IX US Troop Carrier Command and the Royal Air

[38] Ibid., 231.

[39] Idem.

Force's 38th and 46th Groups would deliver all of these forces into battle.[40]

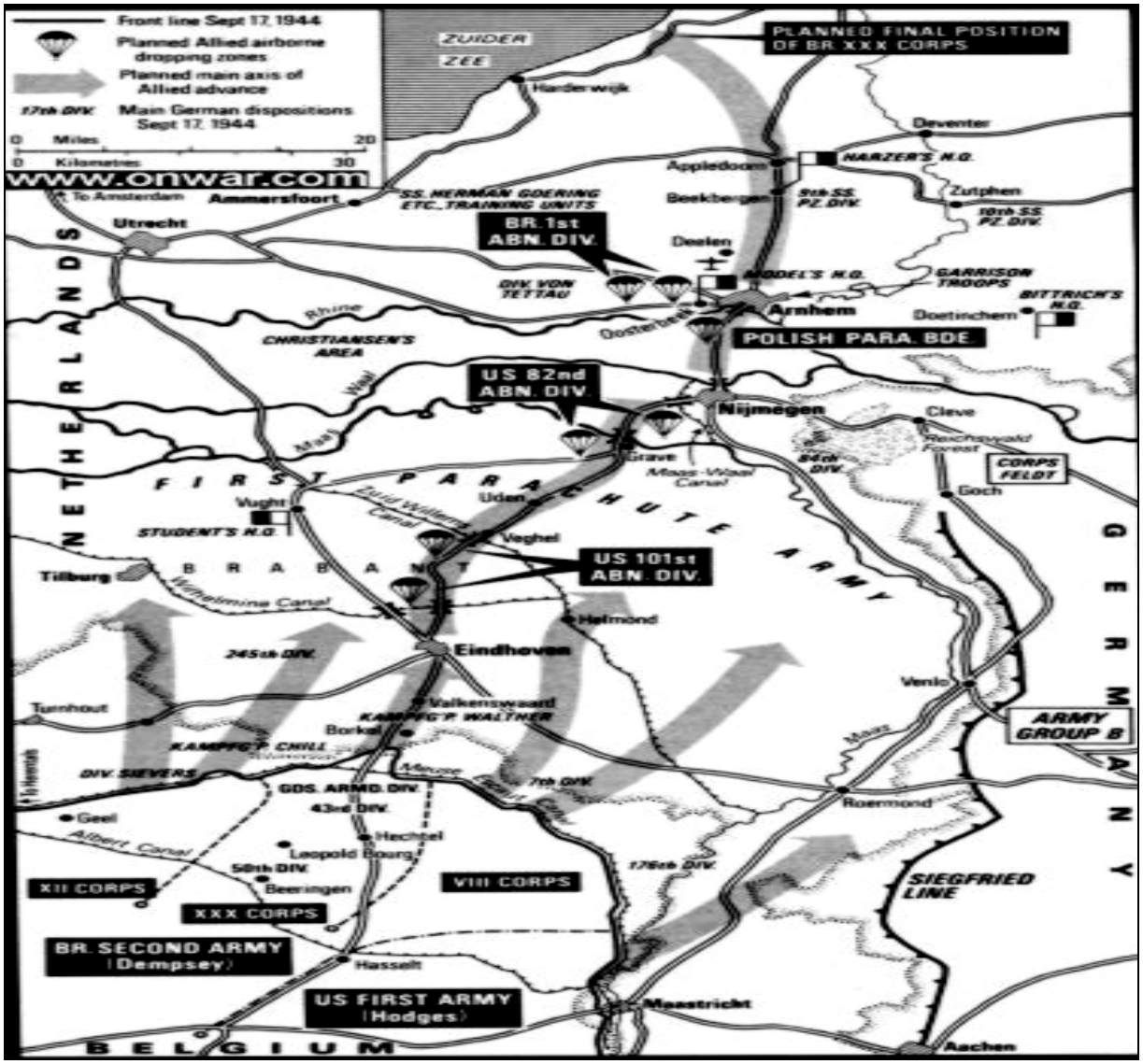

Figure 1 Operation Market[41]

Operation Market Garden was considerably larger in scope and organization than *Operation Comet* but 'Comet' served as the original design for planning. *Operation Market Garden* tasked 1st Airborne Corps with holding open the canal and river crossings for the

[40] Maurice Tugwell. *Airborne to Battle: A History of Airborne Warfare, 1918-1971*. [London: Kimber, 1971.], 231.

[41] On War: Maps of World War II. http://www.onwar.com/maps/wwii/westfront/marketgarden44.htm. Accessed 27 February 2008.

Wilhelmina Canal, the Zuid Willenvard Canal, the bridge at the River Maas, the bridge over the Maas-Waal Canal, the bridge at the river Waal, and the bridge at the Rhine river. This equated to sixty miles of key terrain to be secured and defended until relieved by ground forces within 48 and 72 hours.[42] Brigadier General Browning's plan was to deliver approximately two-thirds of the combat forces in on 17 September and fly in the remainder of the force plus supplies on 18 and 19 September 1944.

The 101st Airborne Division's tasks were "to seize and hold the bridges and defiles on XXX Corps main axis. This included those near Eindhoven, at Zon over the Wilhelmina Canal, at St. Oedenrode, at Veghel over the Zuid Willenvard Canal and another bridge over the Aa River, a mile to the north-east, together with bridges carrying two smaller roads across the first canal, west of the main axis".[43] 82nd Airborne Division was tasked to capture the Groesbeek, the sole dominating land feature that was high ground southeast of Nijmegen in this part of Holland. On the main axis, the 82nd Airborne Division was responsible "for the bridges over the Maas at Grave, over the Maas-Waal canal just west of Nijmegen and over the Waal on the northern outskirts of the town".[44] 1st Airborne Division had the task to "capture the Arnhem bridges, meaning the road bridge north of the Rhine, the pontoon bridge to the west, and the rail bridge between Arnhem and Oosterbeek, with sufficient bridgeheads to pass formations of the Second Army through".[45] Engineers and anti-aircraft artillery remained ready to land by glider in any division area in order to operate and improvise an airstrip. The 52nd (Lowland) Division would remain ready to fly in to an airfield, once the ground forces secured the initial objectives, in order to operate as a ground infantry division.

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[42] Maurice Tugwell. *Airborne to Battle: A History of Airborne Warfare, 1918-1971*. [London: Kimber, 1971.] This entire paragraph paraphrases Chapter 10, p 230-240.

[43] Ibid., 237.

[44] Ibid., 237.

[45] Ibid., 238.

Although the overall operation failed, the airborne portion of *Operation Market Garden* was effective and successful. As described in the introduction, the effectiveness of the airborne operation will be evaluated using the measures of effectiveness for this monograph: strategic mobility, the ability to seize the initiative, and massed effects. All of these measures of effectiveness contributed to the success of the airborne portion of *Operation Market Garden*. In regards to strategic mobility, no other force within the Allied forces' inventory could have responded as rapidly as the airborne forces of the First Allied Airborne Army. Even with the airborne forces scattered throughout the European landscape, the First Allied Airborne Army's ability to notify, plan, and execute the operation greatly exceeded any other Allied forces' reaction capabilities.

In regards to the measure of effectiveness of the ability to seize the initiative, *Operation Market Garden* seized the initiative from the German Army by positioning forces forward to secure decisive terrain in order to pass the decisive effort possibly into the heart of Germany to end the war. Even though the operation failed operationally due to the timing of the ground forces' movement to the canals and bridges, seven days in reality versus 96 hours as planned, airborne forces retained the initiative for the planned amount of time.[46] Airborne forces of the First Allied Airborne Army seized the initiative in some areas of the 60-mile wide area of operations for over three days but in other areas, the initiative was lost after only 24 hours. This loss stemmed not from the lack of troops but from the Supreme Headquarters Allied Forces Europe's faulty intelligence estimates reporting that little German resistance would be in the area. In truth, the German recovery in that area proved “energetic” and greatly underestimated.[47]

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[46] Maurice Tugwell. *Airborne to Battle: A History of Airborne Warfare, 1918-1971*. [London: Kimber, 1971], This information came from Chapter 11, p 264-266, in a critique of the overall operation.

[47] Ibid., 265.

The last criterion used to measure effectiveness is massed effects. *Operation Market Garden* used massed effects extensively in order to seize the canals and bridges. Field-Marshall Montgomery coined the term "airborne carpet" in referring to the sixty miles of area comprising the canals and river crossings in which the ground troops to advance upon.[48] "Many notable ground actions were fought and the performance of the 82nd US Airborne Division in its unique difficult mission can be regarded as classic."[49] Without the large amount of airborne forces appropriated to the operation, the initial seizure and defense of the majority of the canals and bridges would not have lasted as long as it did.[50]

Operation Just Cause

During *Operation Just Cause* in 1989, large scale airborne forces were used as a worldwide responsive force in the largest airborne operation since World War II.[51] This force was a compilation of one brigade-size element of paratroopers from the 75th Ranger Regiment and one brigade from the 82nd Airborne Division, which made up Task Forces RED and PACIFIC respectively. The United States national objectives for Panama were "to restore democracy and capture Manuel Noriega", head of the Panamanian government for "his imperious conduct in Panama and his blatant thumbing his nose at the United States".[52] The parachute forces operated in different task forces and, in some cases, different locations within Panama for the joint

[48] Ibid., 232.

[49] Ibid., 265.

[50] Idem.

[51] Ronald H. Cole. *Operation Just Cause: The Planning and Execution of Joint Operations in Panama February 1988 – January 1990*. [Washington, D.C.: Joint History Office, 1995], 39.

[52] Edward M.Flanagan Jr. *Airborne: A Combat History of American Airborne Forces.* [NY: Ballantine, 2003. 452 p.] The data in this sentence and the following paragraph are from Chapter 27, p 399.

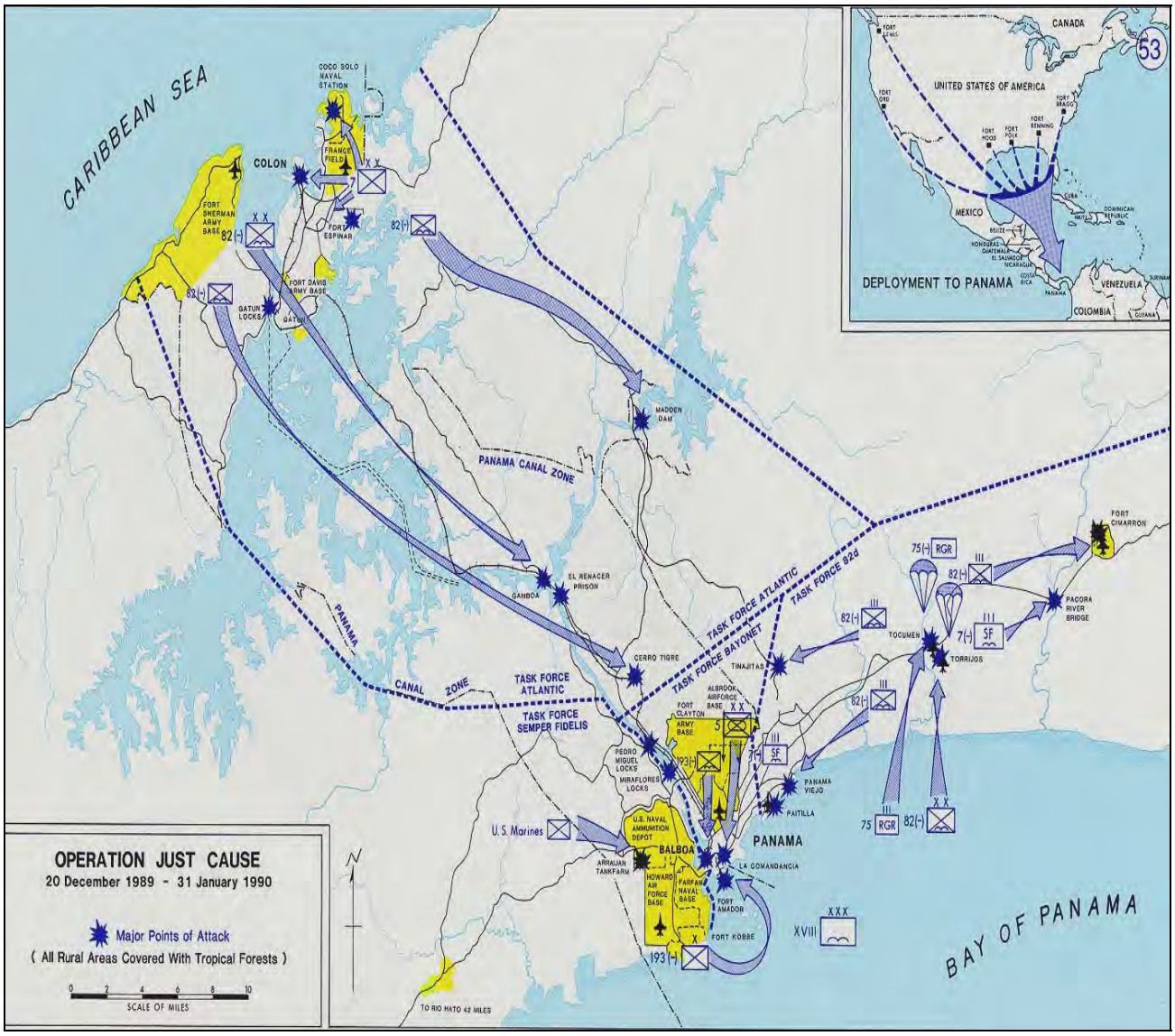

Figure 2: Operation Just Cause.[53]

operation. Their missions complimented one another to achieve the overall mission success. Although these two task forces were only a portion of the overall thirteen thousand Soldiers, Sailors, Airmen, and Marines of the American forces in the early morning hours of 20 December, the parachute forces executed crucial missions to achieve the military objectives for the

[53]United States Military Academy History Department. http://www.dean.usma.edu/departments/history/web03/atlases/conflicts%2058%20west/conflicts%20west%20%20pages/wars%20conflicts%20west%20map%2053.htm. Accessed 26 February 2008.

operation: protect US citizens, defend the Panama Canal, restore democracy, and capture Manuel Noriega.[54] Parachute forces' crucial missions were a part of the first of a three-phase operation – combat operations. Their missions were to neutralize and fix the Panama Defense Force (PDF) in place, capture Noriega, install a new government, and protect and defend US citizens and key facilities. East of Panama City, the first battalion of 75th Ranger Regiment out of Hunter Army Airfield, Georgia with part of the third battalion of 75th Ranger Regiment from Fort Benning, Georgia seized the Torrijos Tocument airport complex and secured the airfield for follow-on airborne forces. Following the battalion of Rangers, the paratroopers from the 1st Brigade, 82nd Airborne Division parachuted onto the secure airfield and then conducted air assaults on Battalion 2000 at Fort Cimarron, UESAT Calvary Squadron at Panama Viejo, and PDF 1st Infantry Company at Tinijitas. To the west of Panama City, second battalion of the 75th Ranger Regiment and the rest of third battalion of 75th Ranger Regiment parachuted onto Rio Hato airfield. This battalion-plus sized element defeated the enemy Panamanian elements, 2000 PDF Battalion and the 6th and 7th Rifle Companies, vicinity the airfield complex.[55]

In less than 36 hours of the joint operation, a division-minus sized parachute force parachuted onto their respective drop zones in order to achieve strategic mobility, the ability to seize the initiative, and massed effects. This operation used the principle of strategic mobility in two ways. The planning for *Operation Just Cause* started as early as February 1988 at the Joint Chief of Staff level. In choosing forces to execute the operation, the overall concern was that Manuel Noriega would flee to the hills and organize guerilla warfare while also ordering abduction and strikes against the 35,000 American citizens residing in Panama.[56] Therefore, the

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[54] Edward M.Flanagan Jr. *Airborne: A Combat History of American Airborne Forces.* [NY: Ballantine, 2003. 452 p.] The data in this sentence and the following paragraph are from Chapter 27, p 401-403.

[55] Ronald H. Cole. *Operation Just Cause: The Planning and Execution of Joint Operations in Panama February 1988 – January 1990*. [Washington, D.C.: Joint History Office, 1995.]

[56] Ibid. This information for this paragraph came from Chapter 1, p 5-16.

first way that strategic mobility was important for this operation involved the forces assigned to the operation. These forces would have to remain flexible and when the time came to execute, needed to either be on the ground or have the ability to deploy quickly.[57] Secondly, these forces needed to be the type that could strike command and control facilities, airfields, and the PDF leadership. This capability existed primarily with airborne forces.

In regards to the criterion of seizing the initiative, the large scale airborne force executed this with precision and speed. By seizing the Rio Hato airfield and Fort Cimarron, this isolated Panama City so that operations could be conducted within Panama City to neutralize PDF headquarters, the *Comandancia*. With the headquarters neutralized, command and control of the PDF forces outside of Panama City relied on lower level leadership and increased the possibility that, with the leadership captured or surrendering the American forces, PDF units would capitulate without the use of force. By seizing the Torrijos-Tocumen Airport, this enabled the airborne forces to neutralize the PDF forces there at the airport and then continue the assault to Panama Viejo, Tinajitas, and Fort Cimarron in order to neutralize PDF forces located at these objectives. Once these objectives were seized, the need arose to neutralize remnants of the PDF and their leadership. With the airborne forces already in the area, the PDF commanders were contacted and ordered to surrender. Once they surrendered, stabilization operations continued in order to restore law and order and promote the new Panamanian government. By seizing the initiative in a precise and fast manner, it gave little time for the PDF to react. Although a large percentage of the PDF did resist and fought vigorously, the size and mobility of the airborne forces allowed the PDF to be decisively engaged and defeated by 3 January – 15 days after the initiation of *Operation Just Cause*.[58]

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[57] This is the monograph author's deduction from the readings.

[58] Ronald H. Cole. *Operation Just Cause: The Planning and Execution of Joint Operations in Panama February 1988 – January 1990*. [Washington, D.C.: Joint History Office, 1995.] This information for this paragraph came from Chapter 4, p 37-44.

The criterion, massed effects, played a crucial role in *Operation Just Cause*. Without a large airborne force seizing the initial objectives during phase one of the operation, the protection of the 35,000 US citizens in country and defense of 142 key facilities along the Panama Canal would be in jeopardy.[59] In addition to the initial objectives, the large airborne forces then aided the further neutralization of the PDF forces outside of the airfields in order to stabilize the country and create a receptive atmosphere for the newly installed government to re-establish law and order.

21st Century Joint Operating Environment

According to *Major Combat Operations Joint Operating Concept Version 2.0*, the future operating environment or landscape for the joint force will have three features: globalization, future force posture and new and maturing command and control structures.[60] Globalization will change how nation states view one another and seek alliances. The Joint Operating Environment or JOE predicts that long term alliances are a thing of the past and information access will level the "playing field" in regards to information and how it is used to make decisions and influence people. In addition, the United States homeland will become a priority target. The adversary will target the political and public will through information architecture and target deployment and sustainment centers to deter national will and coalition cohesion.[61] The future environment requires the future force posture to be rapidly deployable and willing to resolve conflict decisively. This requires the future force to be able to operate "in and from the global commons" and achieve operational access to anywhere on the globe.[62] The future force must be balanced to

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[59] Edward M.Flanagan Jr. *Airborne: A Combat History of American Airborne Forces.* [NY: Ballantine, 2003. 452 p.] The data in this sentence is from Chapter 27, p 400, but the deduction is by the monograph author.

[60] United States Joint Forces Command. *Major Combat Operations: Joint Operating Concept Version 2.0*. [December 2006]: 5-7.

[61] Idem.

[62] Idem.

"surge deployment and employment worldwide to respond to crisis".[63] The future environment will usher in new and mature command and control structures. Functional combatant commands will become the level at which planning, synchronizing, and directing operations occur. The use of government agencies and those command structures will continue to mature and normalize for global operations.

Joint Forces Command issues the Joint Operating Environment (JOE) in order to set the tone for the future operating environment of joint forces looking 8 – 30 years in the future.[64] The JOE builds upon *Joint Publication 1-02*'s definition of operational environment stating that the operating environment "is the combination of elements, factors, and other building blocks that describe the key features of the world in which future joint functions will function."[65] It provides a direction in which joint forces are heading and opportunities the joint forces can take advantage of in the context of future operations. The JOE document states,

> The Joint Operating Environment document provides a framework for the study and articulation of a range of alternative future operating environments. The JOE presents future joint operating environments that have been developed after a wide-ranging examination of global, environmental, sociological, technological, and military dynamics that will influence the course of future conflict. The JOE document is intended to provide a research-based grounding for further discussions about the implications of potential future operational environmental trends in the joint training, experimentation, doctrinal development, and operational communities. These alternative futures can then be used to support the development of joint and service concepts, scenarios, experiments, exercises, and long term operational plans.[66]

The Joint Forces Command understands that the future is fluid and therefore it compiles trends and looks at the direction of these trends. The JOE defines a trend as "the direction and speed of change in important components of the international environment . . . a description of

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[63] Idem.

[64] United States Joint Forces Command. *Joint Operating Environment: Trends and Challenges for the Future Joint Force Through 2030.* [14 December 2007]: 1.

[65] Ibid., 2.

[66] Ibid., 1.

the way one of these components is changing, accelerating, or decelerating . . . trends document ongoing changes to components and allow us to imagine possible characteristics of a future operating environment."[67] The JOE then interprets and analyzes trends and formulates military problems or challenges that the joint force can expect to face in the future. The military challenges then necessitate military implications. "[Military] Implications describe in military terms why trends are important for concept developers and experimenters to consider in exploring and developing future joint force capabilities, and how trends might influence the conduct of military operations in the future."[68] These military implications then direct military concept developers and experimenters to envision how the military could respond in the conduct of military operations to this challenge. Trends can also be altered by shocks. Shocks are defined by the JOE as "events that accelerate or decelerate a trend, reverse the direction of a trend, or even precipitate a new trend."[69] The accumulation of trends and shocks may result in a range of future operating environments. Again, as military challenges give way to military implications, the joint force then can interpret the military implications into military opportunities. Military opportunities are, in effect, broad solutions that could solve the challenges.

In realizing that the international system will not always go along with the United States' ideas of human rights, free markets, and democratic principles, interests of the United States and other states could potentially differ. Competing interests and priorities of the United States and other states ensures that areas of conflict will arise. Along the same lines, it is highly probable that these areas of conflict will give way to threats to the United States' national interests and in some cases national security. It is in this area of conflict where the future joint force will be used to "shape the environment, to deter adversaries, and apply violence in the service of national

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[67] Ibid., 2-3.

[68] United States Joint Forces Command. *Joint Operating Environment: Trends and Challenges for the Future Joint Force Through 2030.* [14 December 2007]: 3.

interests when called upon by civilian leaders."[70] The JOE places future challenges to the future joint force into three groups: enduring challenges, emerging challenges, and national security shocks.

In looking at each of the future challenges listed in the JOE, this monograph posits that large scale airborne operations are effective in the context of 21st century warfare. Each of the following future challenges mentioned in the JOE is listed in the context that large scale airborne operations can positively affect each challenge, be it enduring, emerging, or a national security shock. This monograph will first look at each challenge and then discuss large scale airborne operations' applications to each challenge in respect to the measures of effectiveness, strategic mobility, the ability to seize the initiative, and massed effects.

Enduring challenges are those challenges which are currently ongoing and will continue to remain a concern of the United States and the future joint force the next twenty to thirty years.[71] As enduring challenges, the JOE lists six challenges that the future joint force will continue to face: attacks on US territory, conflict with other great powers, collapse of functioning states, conflict with terrorist networks, conflict with transnational criminals, and prevention of conflict.[72] This monograph will address conflict with other great powers, collapse of functioning states, and prevention of conflict in regards to large scale airborne operations being effective in this type of environment. In regards to attacks on US territory, the JOE sees this as a homeland defense priority. The JOE sees adversaries focusing in three areas in order to impact the United States' homeland defense: "the will of the political leadership and civilian population to engage in the world, our economy as the basis of society and military power, and the physical capabilities

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[69] Idem.

[70] United States Joint Forces Command. *Joint Operating Environment: Trends and Challenges for the Future Joint Force Through 2030.* [14 December 2007]: 37.

[71] Idem.

[72] Ibid., 37-43.

that underpin our ability to project our military power abroad."[73] In the end, an opportunity exists in which the US can project a hardened homeland defense in order to deter and dissuade adversaries to attack the United States.

The next enduring challenge is conflict with other great powers. Based on the spread of civilian and military technologies, economic power growth in the world, and the control of key natural and man-made resources, countries like China, India, and Russia may continue to grow and challenge the US dominance of the international system. These countries could also continue to build their militaries in order to one day assert their interests regionally and worldwide. This emerging challenge presents the opportunities of allowing the US to build a concert of global powers in order to promote a stable international system. It also gives the US the flexibility to conduct offshore balancing to counter Eurasian Powers and allows the US to focus on the global commons of air, sea, space and cyber.[74]

The collapse of functioning states is another enduring challenge that the JOE addresses. Failed and failing states that cannot cope with the stresses of the international economy and the inability to cope with the needs of their citizens could present a number of challenges to the United States. The inability to deal with sub-state or trans-state actors or rising global environmental issues can result in a disturbance of the central authority of that state. This could affect the stability of the region which could bring the potential for terrorist or extremist groups to use the area for bases to train, equip, or plan for actions against the United States or its interests. This instability could lead to religious, economic, or cultural pressures to change the conventional order to other types of order. In this circumstance, the future joint force must learn to interact with this type of society and work to reintegrate them back into the international community in

[73] Ibid., 38.

[74] Ibid., 39.

order to reestablish them as a functioning state with a government that can address problems at a local and state level.

Types of states that are of higher importance to the United States are states with current or nascent nuclear, biological, or chemical weapons capability and also those states rich with global resources. In cases such as these, more immediate and direct military action may be needed to calm regional and global stability. These situations present the US future joint force with multiple opportunities. The future joint force has the opportunity to limit where terrorist and extremist networks can operate. The future joint force also has the opportunity to spread goodwill of the US and integrate with non-government organizations in order to focus more on security and lower the costs of repairing failed states.[75]

The next enduring challenge that the future joint force will face is prevention of conflict. The prevention of conflict necessitates two operations for the future joint force: influence by a forward presence and influence through deterrence. The future joint force must build relationships, share information, and build options integrated with contingency operations with regional allies. Also, security cooperation initiatives should be integrated into theater engagement plans. These deterrence operations can be in the form of show of force exercise demonstrations, foreign basing, foreign naval presence, and nuclear response policies. The opportunity that exists here is to promote peace and cooperation instead of war and disagreement.[76]

The next group that the JOE looks at is emerging challenges. Emerging challenges are "rising challenges that are the result of globalization, uncertainty, complexity, interconnectedness, and the failure of the state system to retain its monopoly on international violence."[77] These

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[75] Ibid., 40.

[76] Ibid., 43.

[77] Ibid., 43-44.

rising challenges include: anti-access strategies and capabilities, emergence of new terrorist ideologies, fourth-generation model warfare, disruption of global trade and finance, persistent cyber-conflict/disruption of information networks, proliferation of weapons of mass destruction or effect, failing nuclear or energy states, failed mega-city, and global anti-American coalition.[78] This monograph will address anti-access strategies and capabilities, failing nuclear or energy states, and failed mega-city as key challenges that a large scale airborne operation could potentially provide aid.

In regards to anti-access strategies and capabilities, adversaries of the United States will attempt to limit access to the local area of conflict. Adversaries will develop capabilities to disrupt and prevent the United States the ability to close with and project power into a region. The adversary will limit the future joint force's ability to build, access, maintain, and communicate with regional bases and complexes. The adversary will target space capabilities that are used to gather intelligence and aid in navigation, global information systems that the US uses to synchronize coordinate forces, regional and intermediate staging areas or bases, and finally adversaries will seek to limit US access to transportation nodes with a proposed theater of operation. It is very likely that the adversary will seek to politically and economically discourage the US from interfering. This emerging challenge presents the opportunity for US forces to maintain technical domains of cyber, space, and air as traditional military strengths.[79]

A new aspect of a failing state will emerge in the near future, if it is not already here, is one armed with nuclear weapons or a state with significant global economic resources, specifically oil production and export capabilities. In regards to US security, both a failed nuclear state and a failed energy state could pose serious concerns. Future joint forces could potentially be faced with securing a failed state's nuclear facilities in order to ensure that nuclear weapons or

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[78] Ibid., 44.

[79] Idem.

materials are not lost or acquired by terrorists groups or hostile factions within the state. In the same light, future joint forces could be tasked with controlling and operating a failed state's energy production facilities for a time to ensure that a global economic resource remains available to the world economy. The future joint force has the opportunity in this respect to further galvanize the United States' leadership role in the interdependent economic system of the world.[80]

The failed mega-city is the last of emerging challenges that a large scale airborne operation could potentially aid the future joint force in managing. A failed mega-city can occur when the growing population of a nation state stresses the existing national or city government to the point that the human disasters occur. This human disaster could lead to collateral damage, sanctuary for US adversaries potentially furthering the chaos, and massive human suffering. In this respect, the future joint force must be prepared to enter into the urban environment with the intent of separating friend from foe and minimizing collateral damage and large scale human suffering. This type of humanitarian disaster gives the US future joint force the opportunity to further the positive views of the United States.[81]

The last group that the JOE looks at in regards to challenges to the future joint force is national security shocks. This portion of the JOE applies "imagination to explore a number of unlikely but highly consequential challenges to our nation's security and the role of US military forces to address them."[82] The national security shocks listed in the JOE are: energy disruption, technological surprise, nuclear attack, pandemic, global depression, and loss of access to portions of the global commons.[83] This monograph will address the last national security shock, loss of

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[80] Ibid., 49.

[81] Ibid., 50.

[82] Ibid., 51-52.

[83] Ibid., 52-55.

access to portions of the global commons. The loss of access to portions of the global commons involves an adversary taking the US's capability of accessing the airspace above 15,000 feet, space, the internet, and the open sea. Based off of the US's massive investments in satellite reconnaissance, communication, and navigation and its command of the open seas, the US has a significant national security investment that adversaries could potentially target and isolate the US from its allies and the rest of the world.[84] The opportunity for the future joint force is to double its efforts to secure the global commons for national security of the United States.

This monograph also looks outside of the realm of joint publications, concepts, and field manuals in reference to military problems their solutions. This monograph also brings in contemporary strategic thinkers like Thomas Barnett and Douglas Macgregor to offer outside views of what military forces will be needed to engage the joint operating environment and combat 21st century warfare. Thomas Barnett, a senior strategic researcher and professor at the Naval War College, poses the future joint force as two separate forces in order to combat 21st century warfare. Dr. Barnett theorizes that the Department of Defense needs two forces, the "Leviathan Force" and the "System Administrator Force".[85] The Leviathan Force serves as "America's killer application . . . projects power menacingly . . . event focused . . . will emphasize speed above all, preempting where possible and always staying on the offensive. Its high tech capabilities will assure it access to any battle space . . . first in, first out." The System Administrator force "will export security nonthreateningly . . . will be continuous . . . will build nations wielding nonlethal technologies appropriate to the policing systems they will generate as legacies to the succeeding political order . . . will be thoroughly multilateral, bureaucratically multilingual, and able to coexist peacefully with any nongovernmental organization or private

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[84] Ibid., 55.

[85] Thomas P. M. Barnett. *The Pentagon's New Map: War and Peace in the 21st Century*. [April 2004], 316-327.

voluntary organization on the scene."[86] Dr. Barnett even goes as far as to call out the "Army's airborne troops" as an "effective swing asset" presumably used by both the [Leviathan and System Administrator] forces when the need arises."[87]

Douglas Macgregor, PHD, a retired US Army colonel, now a defense and policy expert for transformation and organization also poses a future joint force in terms of global joint expeditionary warfare.[88] Dr. Macgregor theorizes that the Army needs to have a combat maneuver group capable of "performing a range of missions, from humanitarian assistance to mid- and high-intensity combat, including forced-entry operations."[89] As a part of this joint expeditionary force, Dr. Macgregor poses an airborne-air assault group that is smaller than a division but larger than a brigade. Within the group are a distributed fires capability (battalion-size), reconnaissance capability made up of rotary, ground, and unmanned aerial vehicle assets, four battalions of airborne and air assault infantry capability, command and control capability, and a support capability. This monograph will take these views into consideration when discussing large scale airborne operations' applications in the JOE and also in the conclusion regarding where further research should continue.

Large Scale Airborne Operations' Applications in the JOE

As the JOE lists these emerging, enduring, and national shocks, they are a point of embarkation to the question this monograph is built around – is the use of large scale airborne operations effective in the context of 21st century warfare? This monograph will take the measures of effectiveness (MOE) and argue that based on these MOEs large scale airborne operations are indeed effective in the context of 21st century warfare.

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[86] Idem.

[87] Idem.

[88] Douglas A. Macgregor. *Transformation Under Fire: Revolutionizing How America Fights*. [2003], 119-154.

[89] Idem.

Strategic Mobility

Strategic mobility as defined earlier as the "the capability to deploy and sustain military forces worldwide in support of national strategy" is an important and vital aspect of the joint operational environment.[90] This monograph views strategic mobility as the capacity to meet crisis timelines necessary to deploy in response to worldwide events. Large scale airborne operations are one aspect of strategic mobility from a ground forces standpoint that enables United States Armed Forces to be where they are needed in a timely manner. As with the 82nd Airborne Division, the only remaining large scale conventional airborne unit currently in the United States Armed Forces arsenal, the ability to place a division-size force onto an objective in 18 hours of notification is both feasible and exercised.[91] Be it an enduring challenge like a conflict with other global powers or at the collapse of a functioning state, large scale airborne operations can potentially put the right amount of forces on the ground to quell riots or deter a global power in order to restrain their forces. When timeliness and the presence of ground forces are paramount, large scale airborne operations is the quickest method from a military perspective. In regards to both enduring and emerging challenges, a large scale airborne operation could potentially provide immediate security and distribution for humanitarian relief. Large scale airborne operations could also be used to prevent nuclear or energy resources from falling into the wrong hands or secure those resources within the borders of a failing nation state. A large scale airborne operation provides the strategic mobility to reach into every corner of the globe and be able to affect current events within a 24 hour window. The JOE insists that the future will be filled with timely decisions that will be needed. In the case of putting soldiers on the ground, the

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[90] U.S. Department of Defense. *Department of Defense Dictionary of Military and Associated Terms: Joint Publication 1-02*. [dated April 2001. AuthPub-JP.]

[91] http://www.bragg.army.mil/82DV/Mission.html. Accessed 24 January 2008.

large scale airborne operation provides a viable and effective means of solving initial problems of security, real time intelligence from the ground, and in some cases getting aid in the fastest means possible. This strategic mobility can be applied in many ways, be it failed state, global power struggle, loss of global nuclear or energy resources, or loss of access to global commons.

Seize the Initiative

With the ability to respond to a world crisis, the strategic mobility of a large scale airborne operation provides a means of access for follow-on forces. A response to a world crisis also requires the force being applied to the problem to be able to improve the situation. In seizing the initiative, the large scale airborne operation must be able to, once on the ground, provide the technical and tactical answers needed for the given situation. In the given enduring challenges, emerging challenges, and national shocks listed in the JOE, all challenges require security first and then an action, be it humanitarian or lethal force, applied to an adversary. Large scale airborne operations provide that security immediately and in the appropriate size so that the force can maintain the security for a limited amount of time in order to provide a means for additional forces to be introduced into the area if needed. The airborne operation can potentially deliver the shock and surprise to seize the initiative and thus alleviate the problem or set conditions so that the decisive effort can be delivered. Be it a humanitarian disaster, conflict with a global power, or the security of global resources, a large scale airborne operation can take the momentum away from a global power positioning forces to launch against the United States or it could also be brought into contain a failed state so that non-governmental organizations can be brought in to deliver the needed aid in a secure and contained environment or it can secure the global resources so that no other state or non-state actor is able to contain. In regards to humanitarian crisis and security of global nuclear and energy resources, seizing the initiative by large scale airborne operations also gains time for global powers to coordinate for appropriate and necessary long term security and aid to the newly failed state. In seizing the initiative in a non-permissive

environment, the large scale airborne operation gains operational access that no other ground force in the United States Armed Forces is capable of executing in a land-locked country or area. This operational access is furthered by large scale airborne operations by giving the joint force access and reach into remote and complex terrain. This access allows the joint force to achieve positional and temporary advantages over the adversary in order to rapidly transition to follow-on decisive operations.

Massed Effects

Without massed effects, the strategic mobility and the ability to seize the initiative will fail in a short amount of time. The application of massed effects by a large scale airborne operation gives the manpower to conduct the type of operations needed for a limited amount of time. The large scale airborne operation can overmatch the enemy at key decisive points allowing the remainder of the joint force to continue to break the adversary's will for organized resistance. In regards to a failed state or security of global resources, the massed effects of the large scale airborne operation has the capability to secure and hold the situation so that it does not escalate and gives time to the state and international governing bodies to determine the best course to alleviate the problem. The massed effects of the large scale airborne operation can then be applied to deescalate the situation to a manageable level so that non-governmental organizations can safely render aid or that global resources can be secured so that the international community no longer has economic concerns regarding the resource. Applied in the necessary amount of time, the massed effects of the large scale airborne operation can potentially secure and contain a volatile situation.

Conclusion

Large scale airborne operations are effective in the context of 21st century warfare. Based off of the criteria presented at the beginning of this monograph, strategic mobility, the ability to seize the initiative, and massed effects are all vital to the needs of the joint force in the joint

operating environment in the context of 21st century warfare. There are no other ground force alternatives for forced entry operations inside a land-locked area of operations in regards to global force on force. In regards to a permissive environment such as a failed nation state or unsecure global resources, the quickest and most ready to respond ground force is available through a large scale airborne operation. A large scale airborne operation provides the strategic mobility to be ready to go anywhere in the world in less than 18 hours. A large scale airborne operation provides the ability to seize the initiative in order to quickly contain a situation with the forces needed or provide operational access for future follow-on joint forces to conduct decisive operations. A large scale airborne operation provides the massed effects needed to contain any situation where on-the-ground security is needed first and in multiple areas. There are, however, areas in which the United States Armed Forces could apply further research and improve the airborne force giving them greater mobility and lethality.

An area where further research is needed is in the configuration of the current airborne division. Currently, the brigade combat teams of the airborne division possess limited mobility once parachuted onto an objective. With only wheeled assets organically assigned to the BCTs and the division, the majority of the force moves from point to point either via foot or by mass transportation capability, be it a light medium tactical vehicle (LMTV) which can carry approximately 15 Soldiers with their basic combat gear or a high-mobility, multipurpose, wheeled vehicle (HMMWV) which can carry up to 8 Soldiers with their basic combat gear. That being said, upon airborne insertion onto an objective, only the priority vehicles and equipment for the division are parachuted onto the objective for the first four to nine hours of the operation. The majority of those vehicles and equipment go to provide security on the objective, command and control of the forces on the ground, and to repair the airfield in order to allow follow-on forces to airland and to seize follow-on objectives. Therefore, mobility takes a lesser priority to establishing an airhead for follow-on forces and communication to both higher headquarters and subordinate units in order to maintain situational awareness. Mobility, however, becomes an

issue in the JOE where forces are needed in multiple locations and time is of the essence. The airborne division requires greater mobility once on the ground. Simply, mobility can be increased by providing more wheeled or even tracked vehicles on the ground. The issue then becomes cubic space and weight allowances for the strategic airlift needed to execute forced entry operations. Further research should be placed into designing lighter vehicles, within the allowances of the United States Air Force, to accompany airborne forces onto their objectives. A starting point for this research should begin with types of equipment and their variants and what advantages they could provide to an airborne division. To note, *Air-Mech-Strike: Asymmetric Maneuver Warfare for the 21st Century* by BG (R) David L. Grange and BG (R) Huba Wass de Czege does an excellent job laying out examples of equipment that could potentially solve problems of mobility and force protection of the airborne division.[92]

Another method of transportation that would radically alter the structure of the airborne division is to allocate more airmobile assets that could transport the division once on the ground. Currently, the airborne division possesses an aviation brigade with enough lift assets for less than an infantry brigade to be air assaulted at one time. The ability for the airborne division to have organic airmobile assets would greatly enhance its mobility once on an objective and alleviate the need for additional lift assets added to the division for an operation. Taking lift assets from the air assault division could provide an option to address this issue. For example, the 82nd Airborne Division already has used the 101st Air Assault Division lift assets for deployments to Afghanistan and Iraq in support of air assault and airmobile operations. Another option would be to produce or add to the existing lift assets assigned to the airborne division. This could only enhance its capabilities once on the objective and not take away from the capabilities of another light infantry division such as the 101st Air Assault Division. Still a third option would be, as

[92] BG (R) Huba Wass de Czege, BG (R) David L. Grange, MAJ Al Huber, MAJ Chuck Jarnot, LTC Rich Liebert, LT Mike Sparks, *Air-Mech-Strike: Asymmetric Maneuver Warfare for the 21st Century*.

suggested in Macgregor's *Transformation Under Fire: Revolutionizing How America Fights*, would be to allocate air assault assets, as in brigades, to the airborne division and allocate airborne assets to the air assault division. The cross-allocation of these assets could provide dual capability to both the airborne division and the air assault division. Further research should be placed into transportation of the airborne division once on their objective in order to give greater overall mobility to the force.

Another area where further research is needed is in increasing the lethality and protection of the airborne division. Currently the airborne division has one field artillery battalion per infantry brigade. This field artillery battalion is equipped with 105mm howitzers, six in each battery with a range of 15.1 kilometers. This does not provide adequate coverage against any significant conventional adversary in terms of global force on force engagement. Also, the lack of armor within the airborne division still limits the division to the amount of lethality and protection it can provide to its Soldiers. Assigning lightweight 155 mm howitzers to the division or an M8 armored gun system-type armored system could potentially solve the intermediate problem or at least give the airborne division something in regards to lethality and protection.[93]

Lastly, an area where further research is needed is at the mission set for large scale airborne operations. Being strategically mobile has its advantages and should not be relegated to only combat operations. Large scale airborne operations could be used to provide immediate humanitarian relief or security for humanitarian relief operations. These types of operations could further build relationships between the Department of Defense, other government agencies, and nongovernment agencies to be used in a time of hostility. The past perceptions have been that large scale airborne operations should only be used when needed. This monograph would

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[2002].

[93] The author is aware of the introduction of the XM-777 lightweight 155mm howitzer as of the publication of this monograph but continued research within the area of lethality still needs to be addressed in all the airborne organization's capabilities, indirect fires being one of them.

pose, however, that these types of operations are needed in the complete range of full spectrum operations in order to provide security and in some cases the only means of immediate humanitarian relief.

All these recommendations do not hinder a large scale airborne operation in its strategic mobility, the ability to seize the initiative, and massed effects. Large scale airborne operations are effective in the context of 21st century warfare and will continue to be in the context of global warfare based on these measures of effectiveness. Continuing to adjust the force structure and mission set must remain a vanguard for any airborne unit and its leaders in order to maintain effectiveness for generations to come.

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